

Claims

1. A biodegradable composition for the preparation of items in contact with food material, comprising :
between 40 and 97 % by weight of poly(lactic acid) polymer, and
between 0.5 and 35 % by weight of co-polyester polymer with adipic acid, and
between 1 and 32 % by weight of mineral particles, comprising magnesium silicate, each on the basis of the total weight of the biodegradable composition.
2. The biodegradable polymer composition according to claim 1, wherein said mineral particles comprising at least two of magnesium, and silicate.
3. The biodegradable polymer composition according to claim 1, to which composition during its preparation less than 5 % of an organic peroxide, on the basis of the total weight of the final biodegradable composition, has been added
4. The biodegradable composition according to claim 3, wherein the amount of organic peroxide added is less than 2 %.
5. The biodegradable composition according to claim 3, wherein the amount of organic peroxide added is between 0.1 and 1.8 %, on the basis of the total weight of the final biodegradable composition.
6. The biodegradable polymer composition according to claim 3, wherein said organic peroxide is selected from the group consisting of diacetyl peroxide, cumyl-hydroperoxide, and dibenzoyl peroxide, dialkyl peroxide, 2,5-methyl-2,5-di (terbutylperoxy)-hexane or mixtures thereof.
7. The biodegradable polymer composition according to claim 1, said composition further comprising between 5 and 45 % by weight of poly(epsilon caprolactone), on

the basis of the total weight of the biodegradable composition.

- 8 The biodegradable polymer composition according to claim 1, said composition further comprising a plasticizer.
- 5
9. A molded article comprising a biodegradable composition, said biodegradable composition comprising :
- between 40 and 97 % by weight of poly(lactic acid) polymer,
- between 0.5 and 35 % by weight of co-polyester polymer with adipic acid, and
- 10 between 1 and 32 % by weight of mineral particles, comprising magnesium silicate, each on the basis of the total weight of the biodegradable composition.
10. The molded article according to claim 12, said molded article being selected from the group consisting of utensils, food service-ware, forks, spoons, knives, chopsticks,
- 15 containers, cups, foam material products, plates and pots.
11. The molded article according to claim 12, wherein the mineral particles comprise magnesium silicate.
- 20 12. The molded article according to claim 12, to which composition during its preparation less than 5 % of an organic peroxide, on the basis of the total weight of the biodegradable composition, has been added.
- 25 13. The molded article according to claim 15, to which composition during its preparation less than 2 % of an organic peroxide, on the basis of the total weight of the biodegradable composition, has been added.
- 30 14. The molded article according to claim 15, to which composition during its preparation between 0.1 % and 1.8 % of an organic peroxide, on the basis of the total weight of the biodegradable composition, has been added.

15. The molded article according to claim 12, said composition further comprising up to 5 % of a mono-ester, on the basis of the total weight of the biodegradable composition and/or a plasticizer.
- 5 16. An extruded article comprising a biodegradable composition, said biodegradable composition comprising :
between 40 and 97 % by weight of poly(lactic acid) polymer, and
between 0.5 and 35 % by weight of co-polyester polymer with adipic acid, and
between 1 and 32 % by weight of mineral particles, comprising magnesium silicate,
10 each on the basis of the total weight of the biodegradable composition.
17. The extruded article according to claim 16, said extruded article being selected from the groups consisting of films, trash bags, grocery bags, container sealing films, pipes, drinking straws, spun-bonded non-woven material, and sheets.
- 15 18. The extruded article according to claim 16, wherein said composition further comprises at least two of magnesium, and silicate, and said mineral particles more preferably comprising magnesium, and silicate.
- 20 19. The extruded article according to claim 16, to which composition during its preparation less than 5 % of an organic peroxide between 5 and 45 % by weight of poly(epsilon caprolactone), on the basis of the total weight of the biodegradable composition.
- 25 20. The extruded article according to claim 16, wherein the composition further comprises up to 5 % of a mono-ester, on the basis of the total weight of the biodegradable composition, and/or a plasticizer.
- 30 21. A method of producing an article comprising a biodegradable composition, said process comprising the steps of:
(i) providing a biodegradable composition, said composition comprising between

40 and 97 % by weight of poly(lactic acid) polymer, and between 0.5 and 35 % by weight of co-polyester polymer with adipic acid, and between 1 and 32 % by weight of mineral particles, comprising at least one of magnesium, and silicate, each on the basis of the total weight of the biodegradable composition,

- 5 (ii) mixing the constituents of (i);
 (iii) heating the mixture to a temperature of from 150 to 200 °C and
 (iv) forming the resultant mixture to obtain a desired shape.

- 10 22. The method of claim 22, wherein the step of forming includes subjecting said biodegradable composition to a process selected from injection molding, blown film extrusion, profile extrusion, and thermoform extrusion.